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Drugs and the bowel: treatments and culprits

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Everybody's Business – Bowel Health

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Constipation

- “ common problem in older people
- “ not a normal consequence of aging
- “ 30-50% in healthy elderly persons use laxatives regularly
- “ 74% of nursing home residents use daily laxatives
- “ 70-80% of older persons average 5-7 bowel movements per week








Rome 111 criteria

- ” 2 or more of the following symptoms at least a quarter of the time
- . straining, lumpy or hard stools
 - . a sensation of incomplete evacuation
 - . a sensation of anorectal obstruction or blockage
 - . they may use manual manoeuvres, where they use their fingers to support the vaginal or rectal wall
 - . less than 3 defecations per week

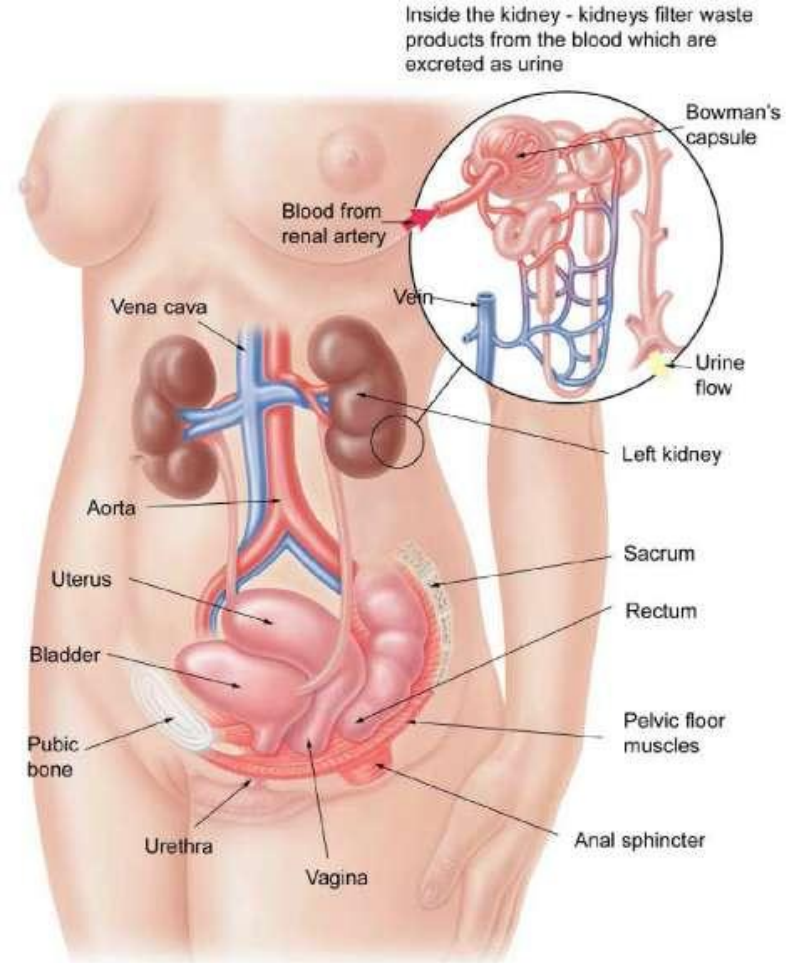
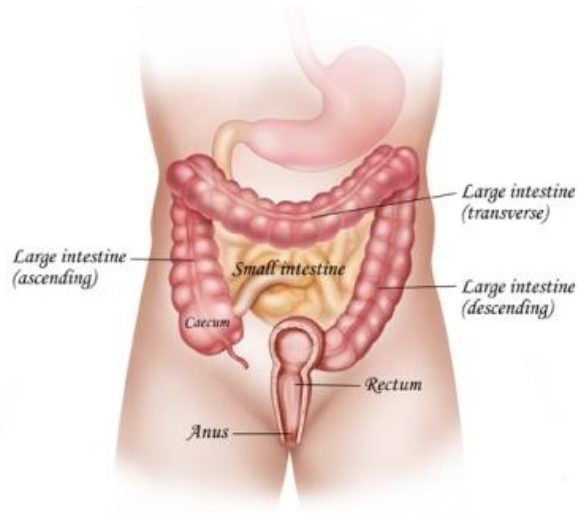
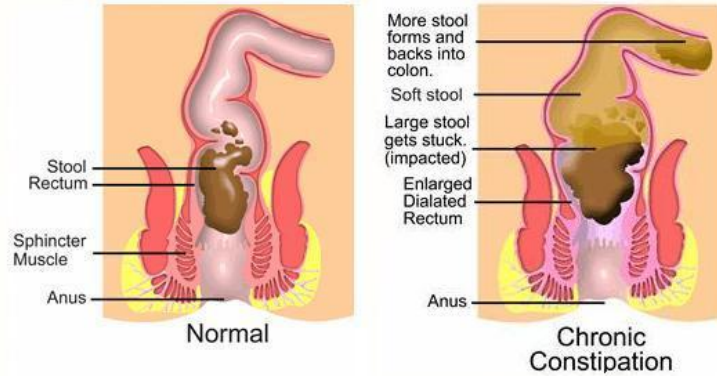
Constipation

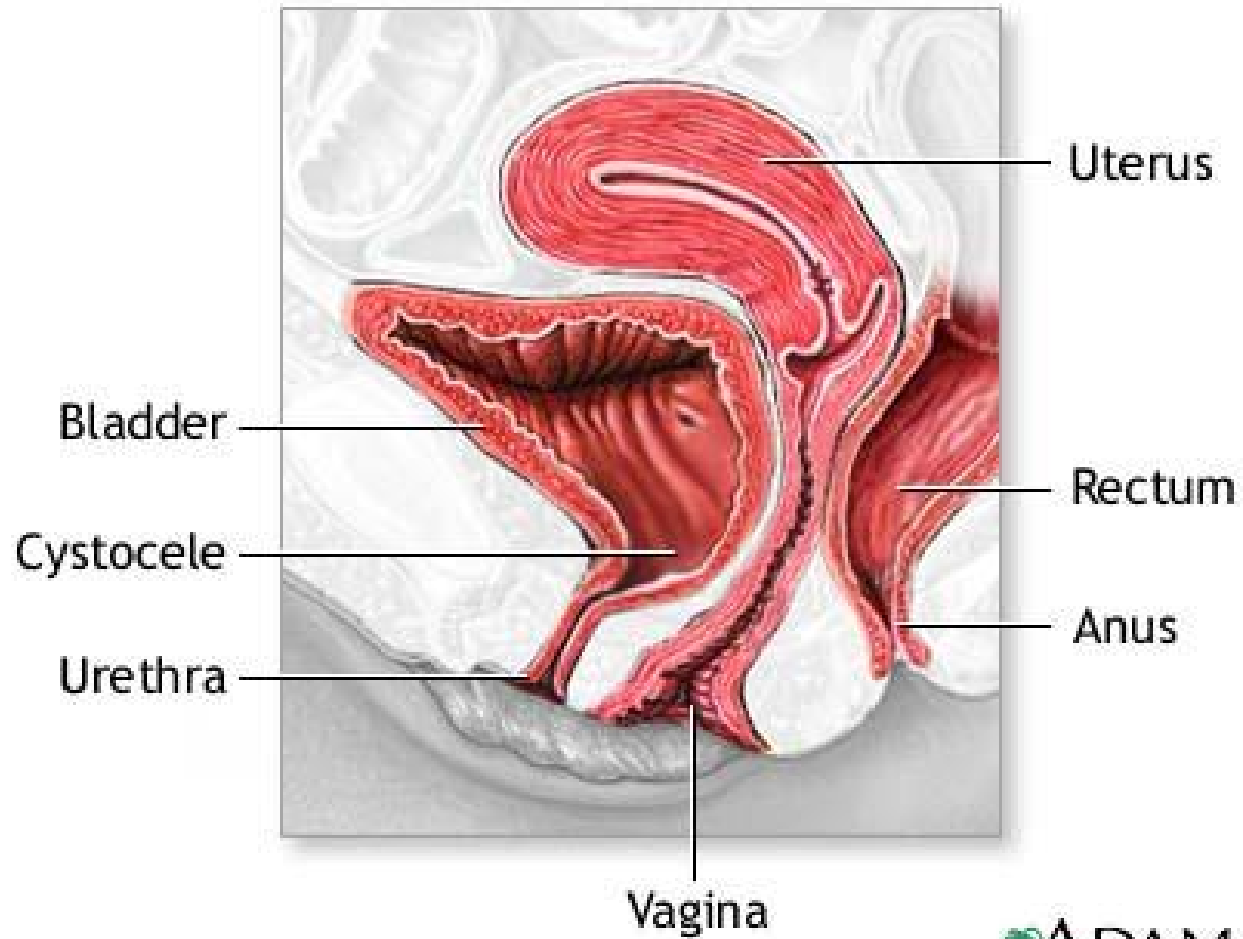
D	Difficult to pass
I	Infrequent compared to normal
S	Smaller than normal
H	Hard

Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. Entirely Liquid

Constipation & incontinence





Patient history

- “ In the last 3 months, how often did you have discomfort or pain anywhere in your abdomen?*

- “ In the last 3 months, how often did you have fewer than three bowel movements per week?*

- “ In the last 3 months, how often did you strain during bowel movements?*

never or rarely; sometimes; often; most of the time, always



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Patient history

” Dietary history and activity levels as well as any recent lifestyle changes should be reviewed

GP referral

- ” Symptoms that are red flags and require referral to a GP
- . rectal bleeding
 - . symptom onset in people older than 50 years
 - . family history of colorectal cancer or inflammatory bowel disease

Colon mechanics

Two types of colonic motility

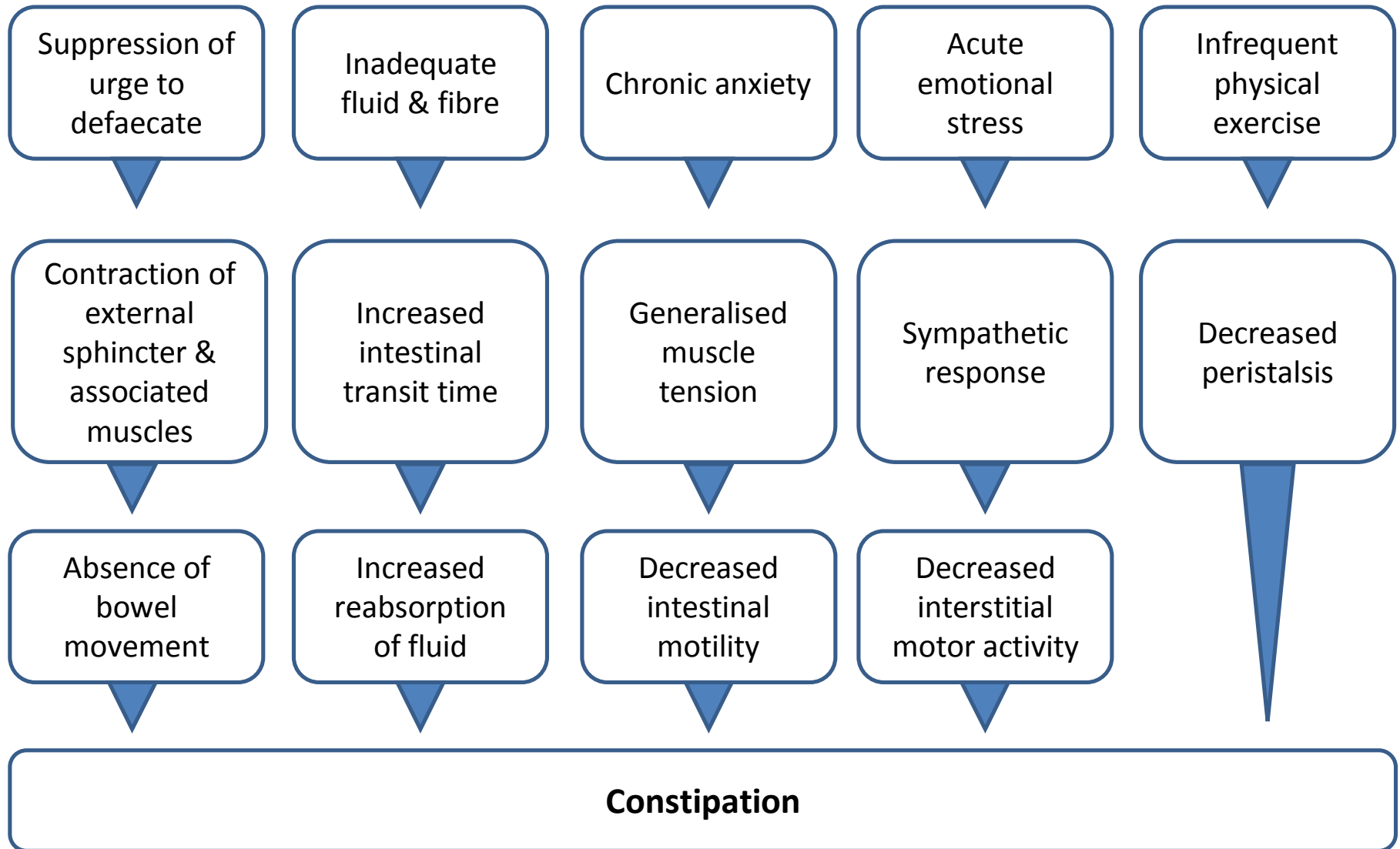
“ Mass movements

- transport faecal mass to rectum
- stimulated by physical activity, meals
- occur several times daily

“ Segmental contractions

- non-propulsive
- inhibit stool passage
- stimulated by drugs

Causes of constipation



Causes of constipation

- ” Dehydration
- ” Depression
- ” Hypothyroidism
- ” Hypercalcaemia
- ” Diabetes
- ” multiple sclerosis
- ” Parkinson’s disease
- ” Cerebrovascular accidents
- ” Pregnancy
- ” Menopause

iv medication causes

- ” Aluminum antacids
- ” Anticholinergic drugs
- ” Calcium supplements
- ” Diuretics
- ” Iron supplements
- ” Opioids
- ” Verapamil

Complications of Constipation

- ” anorexia
- ” nausea
- ” overflow diarrhoea and faecal incontinence
- ” retention of urine
- ” functional intestinal obstruction
- ” delirium

1 Faecal incontinence

” Involuntary loss of liquid or solid stool or flatus

” Causes

- . Diarrhoea
- . Constipation
- . Faecal impaction

Rectal incontinence – risk factors

- “ **childbirth**
- “ irritable bowel syndrome
- “ inflammatory bowel disease
- “ history of anal surgery
- “ rectal prolapse
- “ prolapsing internal haemorrhoids
- “ prostate disease
- “ neurological diseases
 - . multiple sclerosis
 - . spina bifida
- “ diabetes mellitus
- “ autonomic neuropathy
- “ obesity
- “ COPD
- “ dementia

Drugs that exacerbate faecal incontinence

Mechanism	Examples
Alter sphincter tone	Nitrates, calcium channel blockers, sildenafil, SSRI antidepressants
Medicines that cause profuse loose stools	Laxatives, metformin, orlistat, SSRIs, magnesium-containing antacids, digoxin, colchicine, metoclopramide, excessive doses of vitamin C
Medicines that cause constipation	Opioid analgesics including codeine, tricyclic antidepressants, aluminium-containing antacids, calcium and iron supplements, verapamil
Antibiotics	Cephalosporins, penicillins (esp. <i>Augmentin</i>), macrolides
Topical medicines	Glyceryl trinitrate ointment, botulinum A toxin
Psychotropics	Benzodiazepines, tricyclic antidepressants, SSRIs, antipsychotics

Treatment of constipation

- F** Fibre intake
- A** Ample fluids
- E** Education
- C** Cathartics
- E** Exercise
- S** Stop constipating drugs

Poor dietary
fibre intake

- Bulking agents

Hard stools

- Stool softeners

Poor colonic
motility

- Stimulant laxatives

ivryuns – fluid & exercise

- “ increased fluid intake and physical exercise are unproven measures
- “ no evidence to support the use of increased fluid intake or exercise in treating constipation

Dietary Fibre

- “ Recommended daily intake is 20 to 30g

- “ Major sources are:
 - . whole grain bread / cereals
 - . raw fruit / vegetables

- “ 10 - 20g unprocessed wheat bran (about 3 tablespoons) = 10g dietary fibre

Bran cautions

- “ Add bran to diet gradually over a 2 to 3 week period to avoid flatulence and distension
- “ Increased dietary fibre intake (> 30g/day) may cause loss of minerals and trace elements

Kiwifruit

- ” kiwifruit (*Actinidia deliciosa*) has laxative properties
 - . One kiwifruit per 30kg bodyweight for 3 weeks
 - ⇒ bulkier, softer stool
 - ⇒ more frequent stool production

Bulk laxatives

- ” Psyllium Hydrophilic Mucilloid (*Metamucil, Nocolox*)
- ” Ispaghula Husk (*Fybogel*)
- ” Stericula (*Normacol Plus, Normafibre*)
- ” Glucomannan (*Dulcofibre*)
- ” Guar gum (*Benefiber*)

Bulk laxatives

- “ plenty of water
- “ watch sodium and sugar content
- “ onset 2 - 3 days
- “ closely approximates normal bowel function

Stool Softeners

Docusate (*Coloxyl 50mg, 120mg*)

Poloxamer (*Coloxyl Drops*)

- “ Onset 1 - 3 days
- “ recommended minimum dose 240mg daily
- “ No maximum dose

Saline laxatives

- ” Milk of Magnesia
- ” Epsom Salts (Magnesium sulphate)
 - . onset
 - ” dose dependent
 - ” 2 - 6 hours
 - . cheap
 - . watch for griping, wind, watery stools
 - . caution in patients with significant renal dysfunction

Osmotic laxatives

- “ Sorbitol 70% (*Sorbilax*)
- “ Lactulose (*Duphalac, Actilax, Lactocur, Lac-Dol*)
- “ Macrogol 3350 (*Movicol, OsmoLax*)
- “ glycerin suppository

Osmotic Laxatives

- “ onset - 24 to 48 hours
- “ non-absorbable
- “ dose 30mL bd
- “ increases water content of stool & stimulates intestinal motility
- “ safe in immobilised patients
- “ safe in patients with renal dysfunction
- “ cause flatulence, abdominal cramping, distention

Movicol

- “ Macrogol 3350 and electrolytes
- “ iso-osmotic solution \Rightarrow 125mL water to bowel \Rightarrow
hydrates and softens stool
- “ dose dependent effect
- “ 1-3 sachets per day
- “ for impaction 8/day for 3 days

PEG vs Polyethylene Glycol for Chronic Constipation

- “ Polyethylene glycol (macrogol) produces greater improvement in stool frequency and form, relief of abdominal pain, and need for additional treatments as compared with lactulose, according to combined data from 10 randomized clinical trials involving more than 850 adults and children
 - . In adults, PEG and lactulose gave similar relief of abdominal pain.

Stimulant laxatives

- ” Sennoside Granules (*Senokot*)
- ” Docusate /Senna (*Coloxyl with Senna*)
- ” Docusate (*Sennesoft*)
- ” Senna 8mg (*Senokot*)
- ” Bisacodyl 5mg (*Dulcolax, Bisalax*)
- ” Sodium picosulfate (*Dulcolax SP Drops*)
- ” Liquid Paraffin (*Agarol*)

Stimulant laxatives

- “ direct stimulation of intestinal motility
- “ may cause griping, cramps
- “ onset
 - . dose dependent
 - . 2-6 hours to 5 days
- “ short term use only
- “ useful for acute treatment

Agarol

- “ risk of aspiration and lipoid pneumonia
 - . do not administer at bedtime
- “ decreased absorption of fat-soluble vitamins
- “ risk of anal leakage due to paraffin
- “ used in Shaw’s Cocktail

Suppositories / Enemas

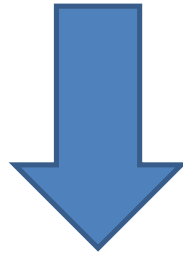
Suppositories - Glycerin, Bisacodyl (*Dulcolax*)

Enemas - *Microlax*, warm water, oil

- “ Onset immediate
- “ Short term use only
- “ Useful for acute treatment
- “ Watch for abuse

Opioid-induced constipation

Stimulation of opioid receptors in GIT



delayed gastric emptying
delayed GI transit time
increases anal sphincter tone

Opioid-induced constipation

- “ decrease propulsive contractions
- “ prolonged colonic transit time
 - . greater absorption of sodium and water ⇒ drier stool
- “ dulls perception of defaecation reflex
- “ sensation of fullness and nausea
 - . decreased dietary intake

Opioid-induced constipation

- “ can occur with 1st dose and can be chronic problem
- “ tolerance does not develop
- “ commence stimulant laxative + stool softener
- “ titrate dose every few days until comfortable defecation is achieved and increase laxative doses if the opioid dose increases
- “ avoid bulk laxatives

methylnaltrexone injection (Relistor)

- “ opioid-induced constipation in people receiving palliative care who have not responded to adequately titrated laxatives
- “ increases bowel movements without reversing analgesia
- “ not a treatment for constipation caused by factors other than opioids
- “ recommended dose varies with weight
- “ do not use more than once every 24 hours

Summary

Laxative	Starting dosage	Onset time	Side effects
Bulk-forming laxatives	Varying	12 hr to 4 days	Flatulence, bloating, intestinal blockage, swallowing difficulty and choking if not taken with adequate fluid, or with dehydration
Lubricant laxatives	15-45mL at bedtime	6-8 hr	Anal incontinence & irritation, oil leakage from anus
Osmotic laxatives – lactulose, sorbitol	15-60mL	24-48 hr	Bloating, cramping, flatulence, diarrhoea, nausea and vomiting, epigastric pain
Osmotic laxatives – macrogols	1 daily, up to 8 per day	1-3 days	Loose, watery, more frequent stools
Stimulant laxatives – senna	2 tabs daily	6-12 hr	Abdominal cramping, flatulence, diarrhoea, electrolyte disturbance
- bisacodyl	5-10mg daily 10mg suppos	6-12 hr 15-60 min	